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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,687	05/30/2001	Takeshi Misawa	0905-0261P	6060

2292 7590 06/09/2005

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EXAMINER

YE, LIN

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/866,687	Applicant(s) MISAWA, TAKESHI	
	Examiner Lin Ye	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-5 filed on 3/7/05 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 5 is rejected under 35 U.S.C. 102(e) as being anticipated by Ishihara et al. J.P. Publication 2000-152259.

Referring to claim 5, the Ishihara reference discloses in drawing 6a-b, a method of controlling signals from a photoelectric conversion element array (in honeycomb arrangement), comprising: arranging a plurality of photoelectric conversion elements, each photoelectric conversion element producing a color signal, in adjacent offset rows and columns, such that each adjacent row and column is comprised of either photoelectric conversion elements producing only a green color signal or photoelectric conversion elements that produce in an alternating sequence, a red color signal and a blue color signal; forming a vertical transfer path adjacent to each column by which the color signals are

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transferred from a photoelectric conversion elements to a horizontal transfer path; and (in still picture photograph mode) mixing the green color signals, red color signals and blue color signals from adjacent rows so that the order of the color signals in the horizontal transfer path is a repetition of a red color signal, green color signal, blue color signal and green color signal (See Ishihara reference Drawing 6b, and Detailed Description [0040]).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:.

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda J.P.

Publication 11-275594 in view of Ishihara et al. J.P. Publication 2000-152259 and the **applicant's admitted Prior Art.**

Referring to claim 1, the Oda reference discloses in Drawings 1 and 11(b), a solid-state electronic imaging device (10) (See Detailed Description [0024]) comprising: a lot of photoelectric conversion elements (Pi) arranged in the column direction and the row direction; vertical transfer paths (12a-12d) for transferring signal charges respectively accumulated in said photoelectric conversion elements in the vertical direction; vertical driving signals (V1-V4, see [0029]) for respectively shifting the signal charges accumulated in the photoelectric conversion elements to said vertical transfer paths; a horizontal transfer

path (e.g., the horizontal transfer path including a odd transfer way 14a and a even transfer way 14b) for horizontally transferring the signal charges transferred from the vertical transfer paths; color filters (See [0036]) respectively formed on the photoelectric conversion elements and arranged such that the order of color signal components respectively represented by the signal charges substantially corresponding to one row which are inputted to the horizontal transfer path in reading out all pixels is a repetition of a red signal component, a green signal component, a blue signal component, and a green signal component, and the respective timings at which the red signal component and the blue signal component are outputted in odd rows (34a) are reverse to those in even rows (34b); and readout control means for applying the transfer pulses to said vertical driving signals such that the order of color signal components respectively represented by the signal charges substantially corresponding to one row which are inputted to the horizontal transfer path is a repetition of a red signal component, a green signal component, a blue signal component, and a green signal component in every other row, and the respective timings at which the red signal component and the blue signal component are outputted in odd rows are reverse to those in even rows (See Figure 11(b) and [0048]). However, the reference does not explicitly show **transfer gates** controlled by the vertical driving signals (V1-V4, see [0029]) for respectively shifting the signal charges accumulated in the photoelectric conversion elements to said vertical transfer paths.

The Ishihara reference discloses in Drawing 2, a solid-state electronic imaging device (See [0020]-[0021]) comprising the image pick-up section (108) and color separation filter for separating the color of incident light corresponded to the incident light side from photo

detector (108a); and transfer gates (108b) for respectively shifting the signal charges accumulated in the photoelectric conversion elements to said vertical transfer paths upon receipt of transfer gate pulses. The Ishihara reference is evidence that one of ordinary skill in the art at the time to see more advantages for the transfer gates formed on the image pick-up section for shifting the signal charges from the photoelectric conversion elements to vertical transfer path so that the photoelectric conversion elements would not leak the signal charge which received to the photoelectric conversion elements between the vertical transfer components. For that reason, it would have been obvious to one of ordinary skill in the art to modify the imaging device of Oda ('594) for providing the **transfer gates** controlled by the vertical driving signals (V1-V4, see Detailed Description [0029]) for respectively shifting the signal charges accumulated in the photoelectric conversion elements to said vertical transfer paths as taught by Ishihara ('259).

The Oda and Ishihara references do not explicitly show mixing adjacent signal charges in the horizontal transfer path.

The **applicant's admitted Prior Art** teaches in Background of the Invention section of applicant's specification (See page 2, lines 6-25), a CCD image device of the honeycomb arrangement, the signal charges corresponding to three pixels which are adjacent in the horizontal direction are mixed to generate complementary colors. The **applicant's admitted Prior Art** is evidence that one of ordinary skill in the art at the time to see more advantages the image device mixing adjacent signals in the horizontal transfer path so that making it possible to increase the speed of transfer (See page 2, lines 22-25). For that reason, it would have been obvious to one of ordinary skill in the art to modify the imaging device of Oda

(‘594) for providing the method to mix adjacent signal charges in the horizontal transfer path as taught by **applicant’s admitted Prior Art**.

Referring to claim 2, the Oda, Ishihara and applicant’s admitted Prior Art references disclose all subject matter as discussed in respected claim 1, and the Ishihara reference discloses photoelectric conversion elements are in a honeycomb arrangement (See drawing 6) where they are arranged in odd rows or even rows with respect to odd columns and arranged in even rows or odd rows with respect to even columns, and the color filters which allow the transmission of a green light component are respectively arranged in said photoelectric conversion elements in odd rows or even rows, and the color filters which allow the transmission of a blue or red light component are alternately arranged for each column and for each row in said photoelectric conversion elements in even rows or odd rows (See Ishihara reference Drawing 6a, and Detailed Description [0040]). The Ishihara reference is evidence that one of ordinary skill in the art at the time to see more advantages for the image device is in the honeycomb arrangement instead of the matrix arrangement so that guaranteeing the required size of the individual pixel and thereby the sensitivity of the entire apparatus while increasing yield on a production line and false colors particular to a signal photosensitive portion can be reduced. For that reason, it would have been obvious to one of ordinary skill in the art to modify the imaging device of Oda (‘594) for providing the honeycomb arrangement for the image device as taught by Ishihara (‘259).

Referring to claim 3, the Oda and Ishihara references disclose all subject matter as discussed in respected claim 1, and the Ishihara reference discloses wherein said color filters are in a G-stripe R/B checkered arrangement where the color filters which allow the

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transmission of a green light component are arranged in a vertical stripe shape, and the color filters which allow the transmission of a blue or red light component are arranged in a checkered shape (See Drawings 2, 4-6, Detailed Description [0020] and [0034].

Referring to claim 4, the Oda and Ishihara references disclose all subject matter as discussed in respected claim 1.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


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- a. Inuiya et al. U.S 6,882,364 discloses a solid-state imaging apparatus in a honeycomb arrangement.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lin Ye whose telephone number is (571) 272-7372. The examiner can normally be reached on Mon-Fri 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DAVID L. OMETZ
PRIMARY EXAMINER

Lin Ye
June 6, 2005